

ABSTRACT

MAGNETIC HEAD P1 MAGNETIC POLE NOTCHING WITH REDUCED POLYMER DEPOSITION

The present invention includes a two-step etching process for notching the P1 pole of the
5 write head element of a magnetic head. In a first step, the preferred embodiment utilizes a
combination of C_2F_6 and argon gases (designated as C_2F_6/Ar) as the etchant gas to preferentially
etch portions of the alumina write gap layer. Thereafter, in the second step, argon is used as the
etchant gas to preferentially etch the P1 pole material. The C_2F_6/Ar etchant gas preferably
includes C_2F_6 gas in a concentration range of from 50% to 90%, with a preferred concentration
10 range being from 70% to 80%. The etching of the alumina write gap layer is preferably
conducted with a first etchant ion beam angle of from 5° to 30° , and a second etchant ion beam
angle of from 65° to 85° .